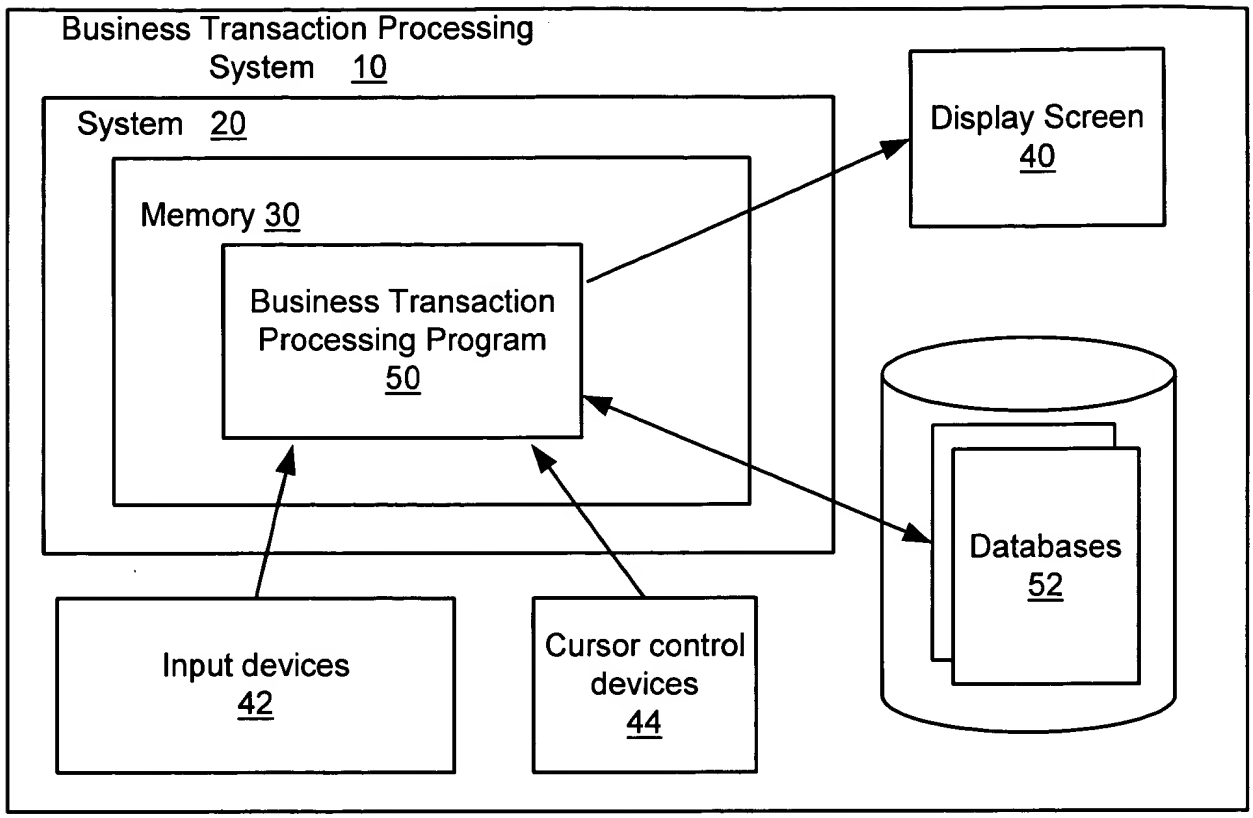
Business Transaction Processing System 10
System 20
Memory 30
Business Transaction Processing Program 50
Display Screen 40
Databases 52
Input devices 42
Cursor control devices 44

FIG. 1a

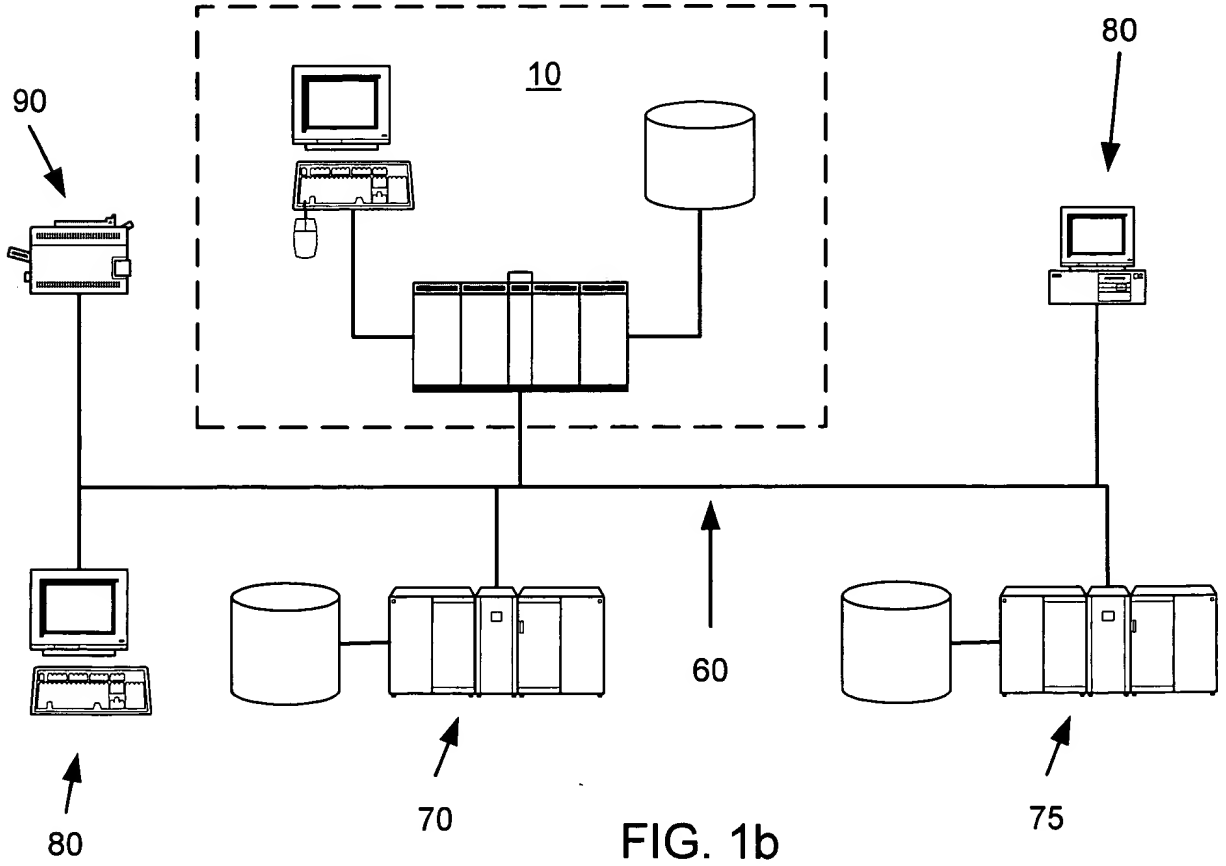
10
90
80
60
80
70
75

FIG. 1b

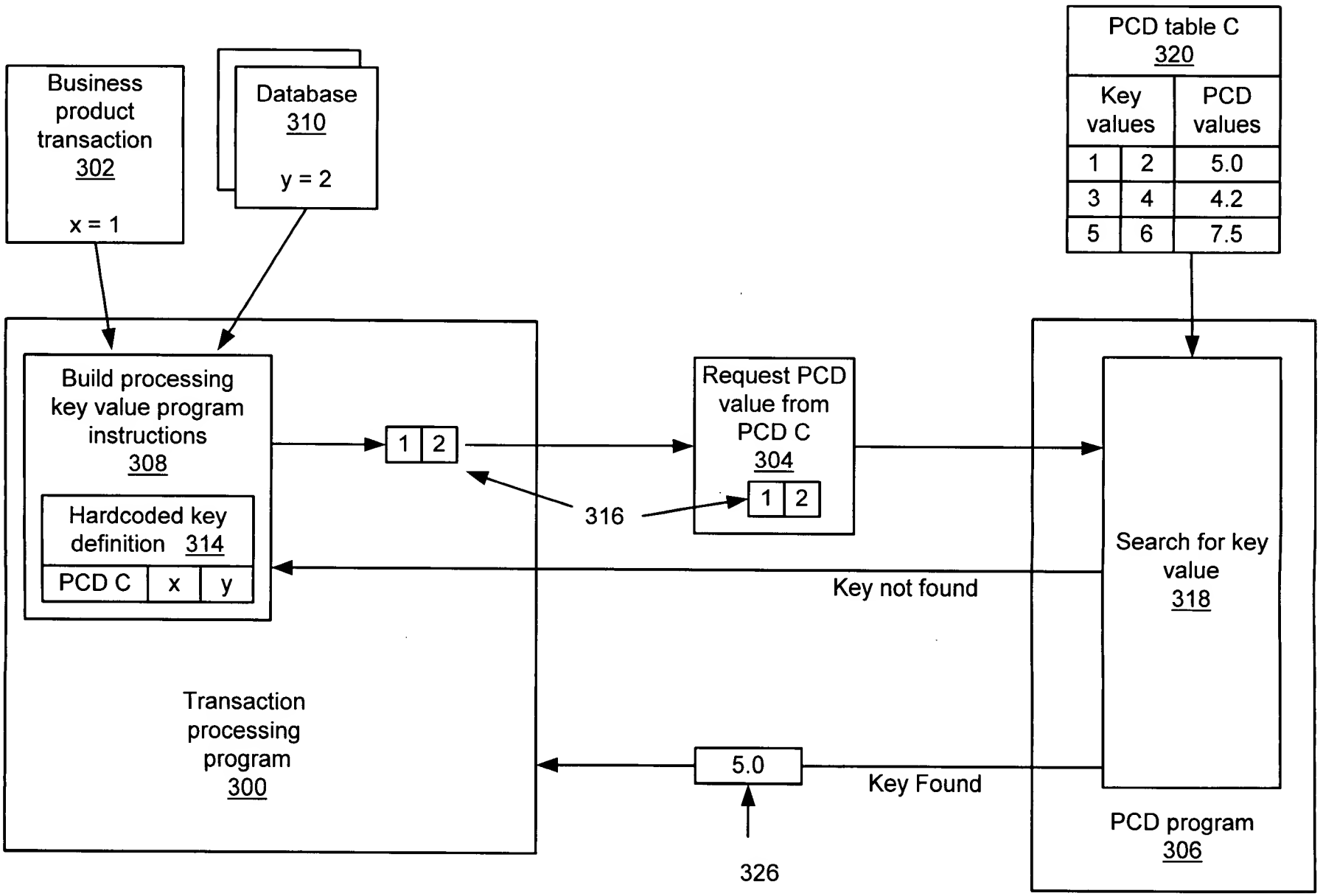

FIG. 2 - Prior Art

0020T "95066960

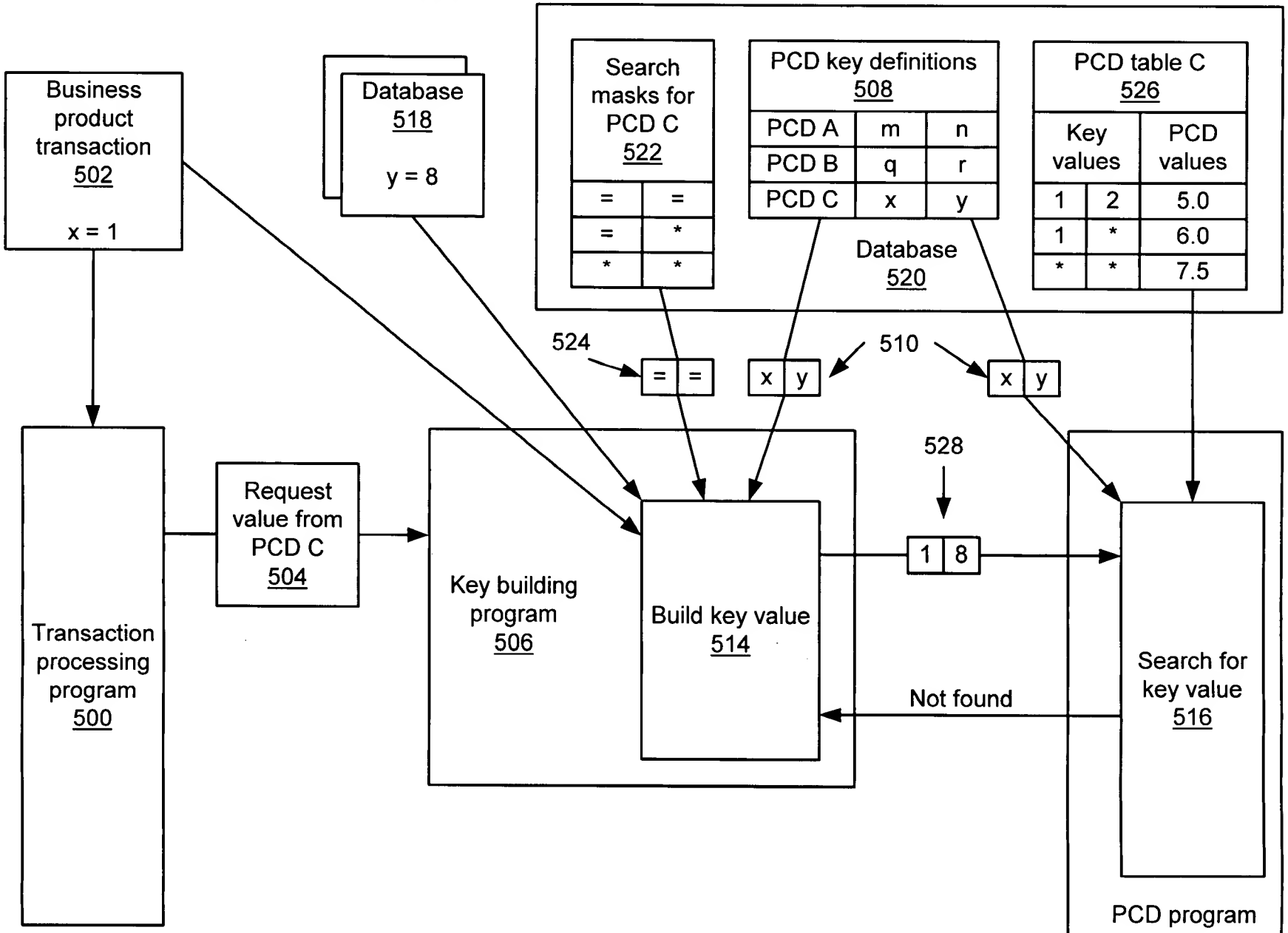

FIG. 3a

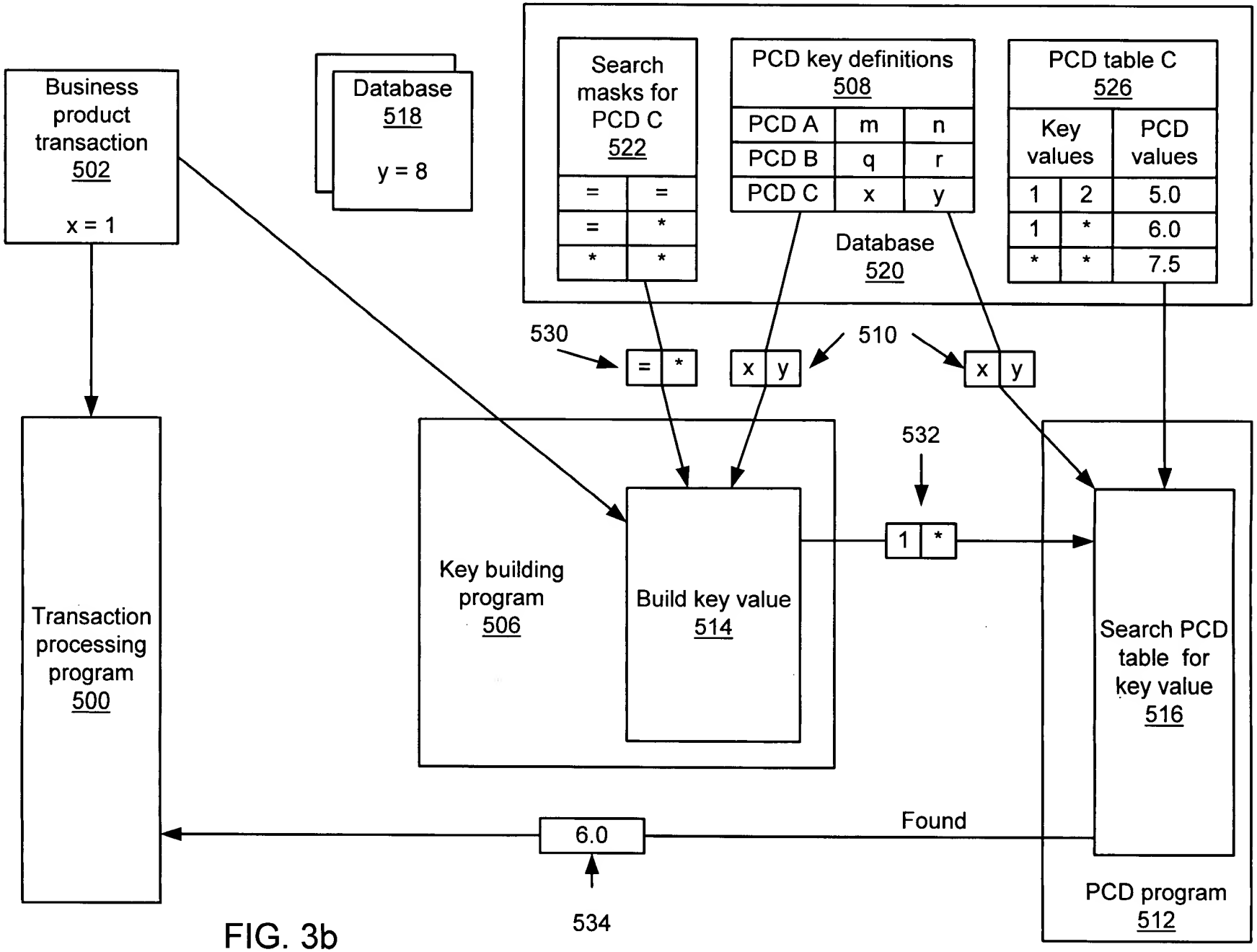
Business product transaction 502
x = 1
Database 518
y = 8
Search masks for PCD C 522
= =
= *
* *
PCD key definitions 508
PCD A m n
PCD B q r
PCD C x y
PCD table C 526
Key values
PCD values
1 2 5.0
1 * 6.0
* * 7.5
Database 520
530
= *
x y
510
x y
532
1 *
Transaction processing program 500
Key building program 506
Build key value 514
Search PCD table for key value 516
PCD program 512
6.0
Found
534

FIG. 3b

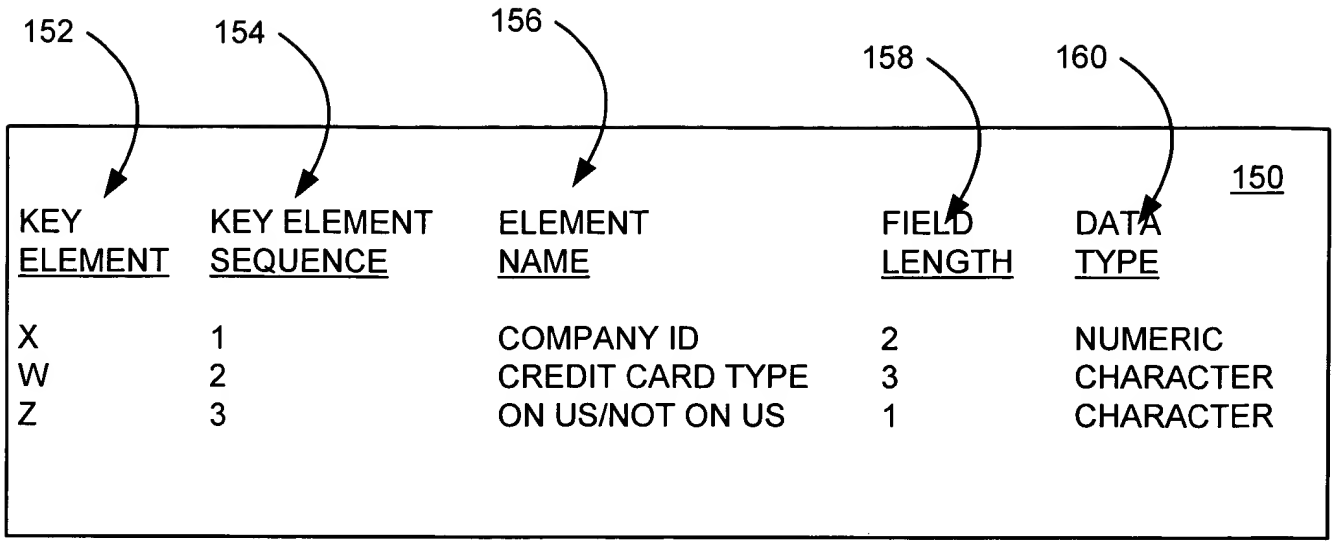
152
154
156
158
160
150
KEY ELEMENT
KEY ELEMENT SEQUENCE
ELEMENT NAME
FIELD LENGTH
DATA TYPE
X 1 COMPANY ID 2 NUMERIC
W 2 CREDIT CARD TYPE 3 CHARACTER
Z 3 ON US/NOT ON US 1 CHARACTER

FIG. 4

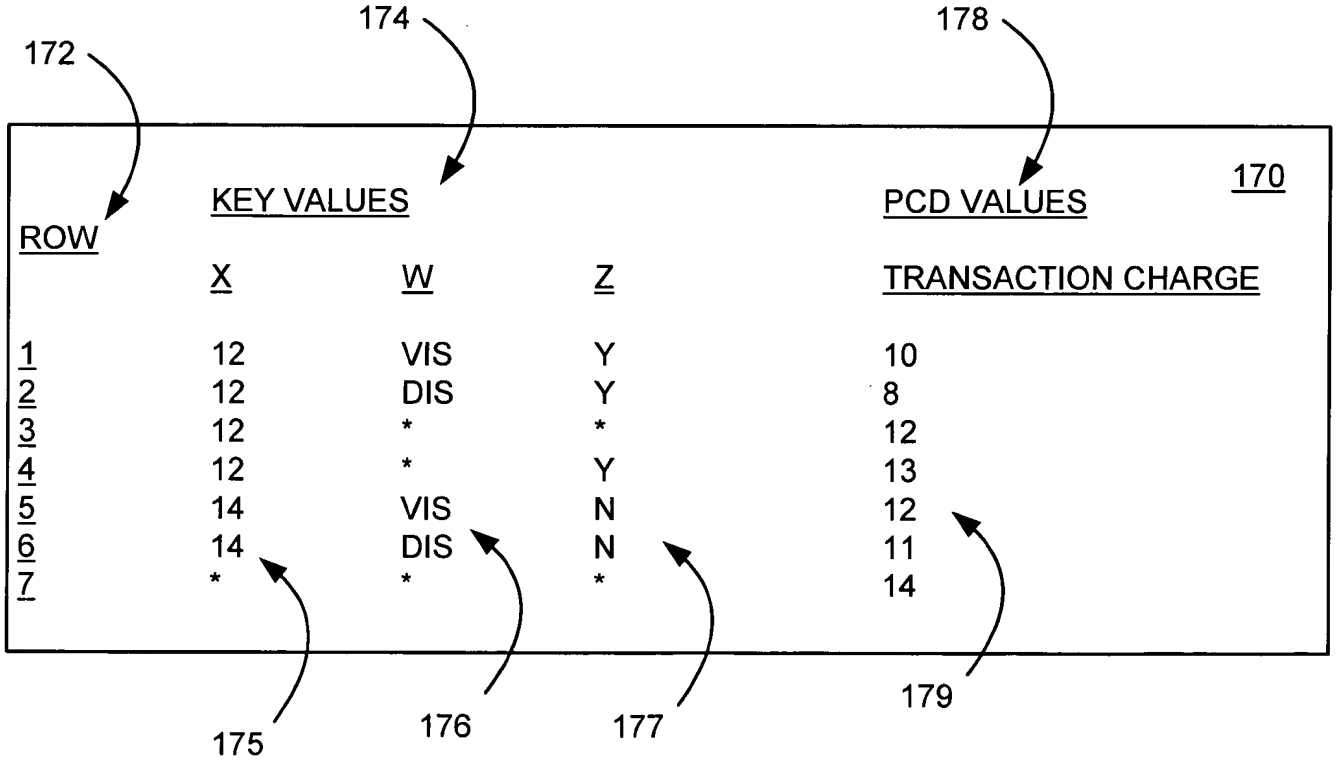
172
174
178
170
ROW
KEY VALUES
PCD VALUES
X
W
Z
TRANSACTION CHARGE
1 12 VIS Y 10
2 12 DIS Y 8
3 12 * * 12
4 12 * Y 13
5 14 VIS N 12
6 14 DIS N 11
7 * * * 14
175
176
177
179

FIG. 5

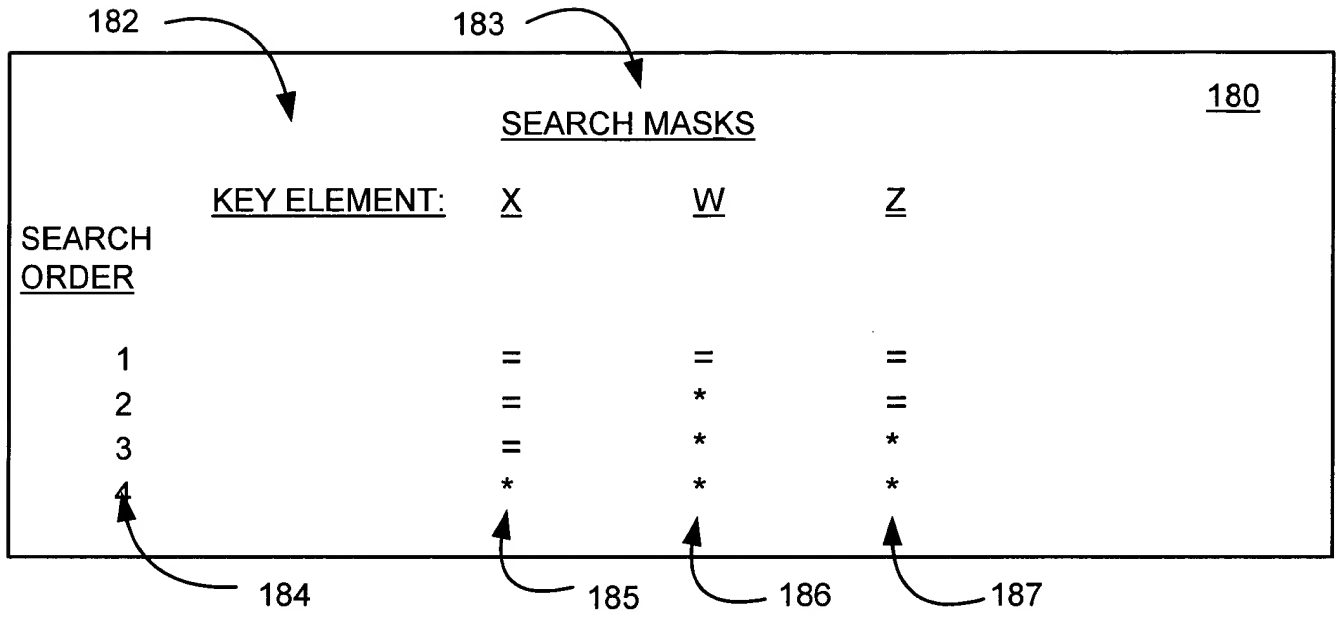
182
183
180
SEARCH MASKS
KEY ELEMENT:
X
W
Z
SEARCH ORDER
1 = = =
2 = * =
3 = * *
4 * * *
184
185
186
187

FIG. 6

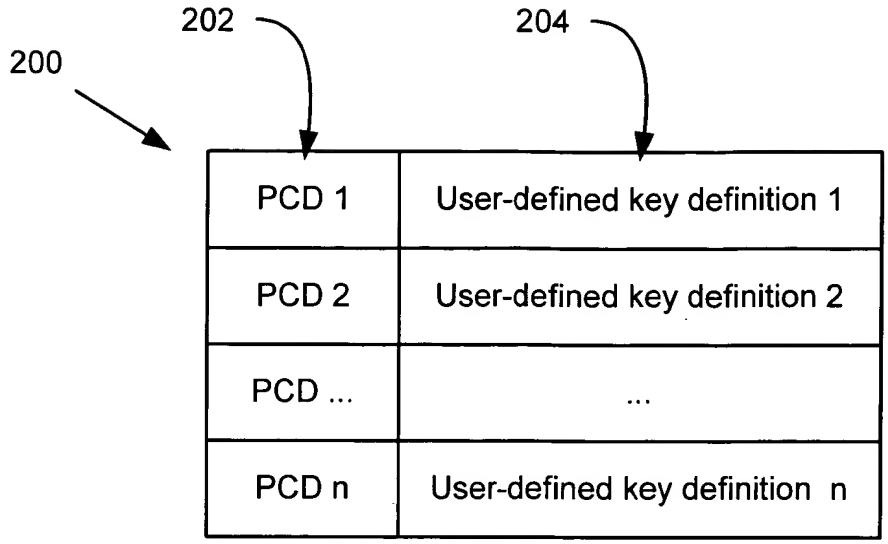
200
202
204
PCD 1
User-defined key definition 1
PCD 2
User-defined key definition 2
PCD ...
...
PCD n
User-defined key definition n

FIG. 7

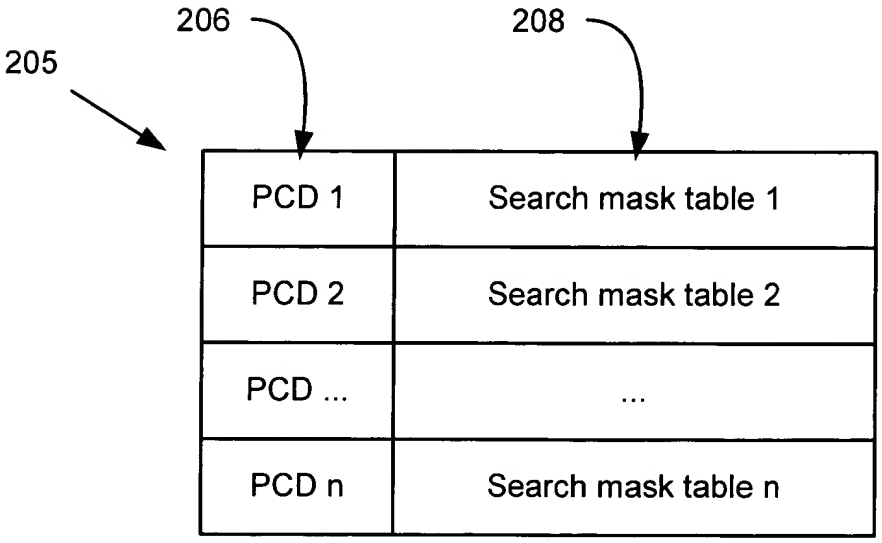
205
206
208
PCD 1
Search mask table 1
PCD 2
Search mask table 2
PCD ...
...
PCD n
Search mask table n

FIG. 8

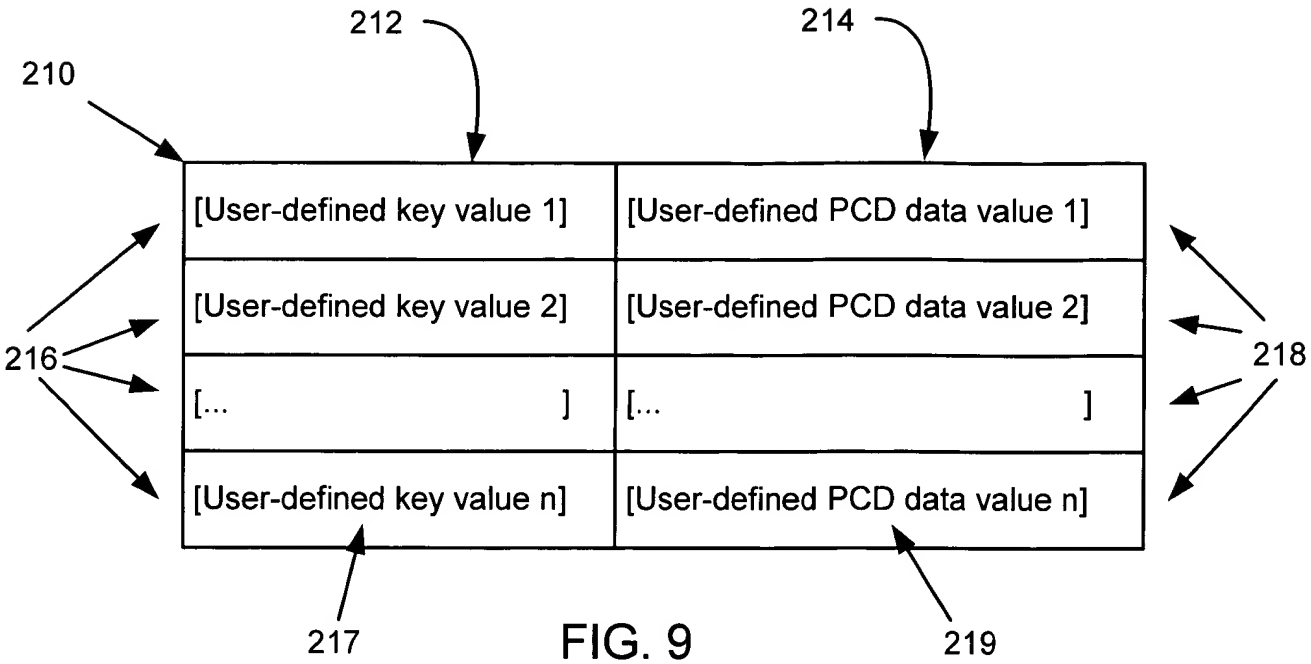
212
214
210
[User-defined key value 1]
[User-defined PCD data value 1]
[User-defined key value 2]
[User-defined PCD data value 2]
[...]
[...]
[User-defined key value n]
[User-defined PCD data value n]
216
218
217
219

FIG. 9

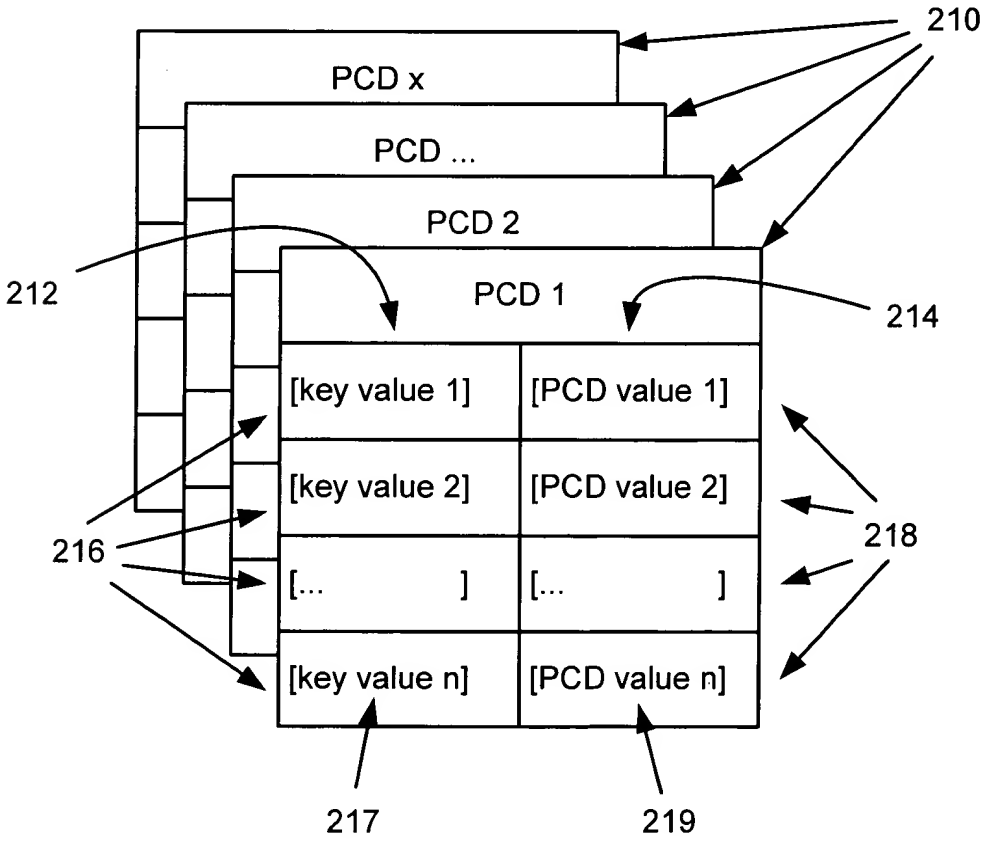
210
PCD x
PCD ...
PCD 2
PCD 1
212
214
[key value 1]
[PCD value 1]
[key value 2]
[PCD value 2]
[...]
[...]
[key value n]
[PCD value n]
216
218
217
219

FIG. 10

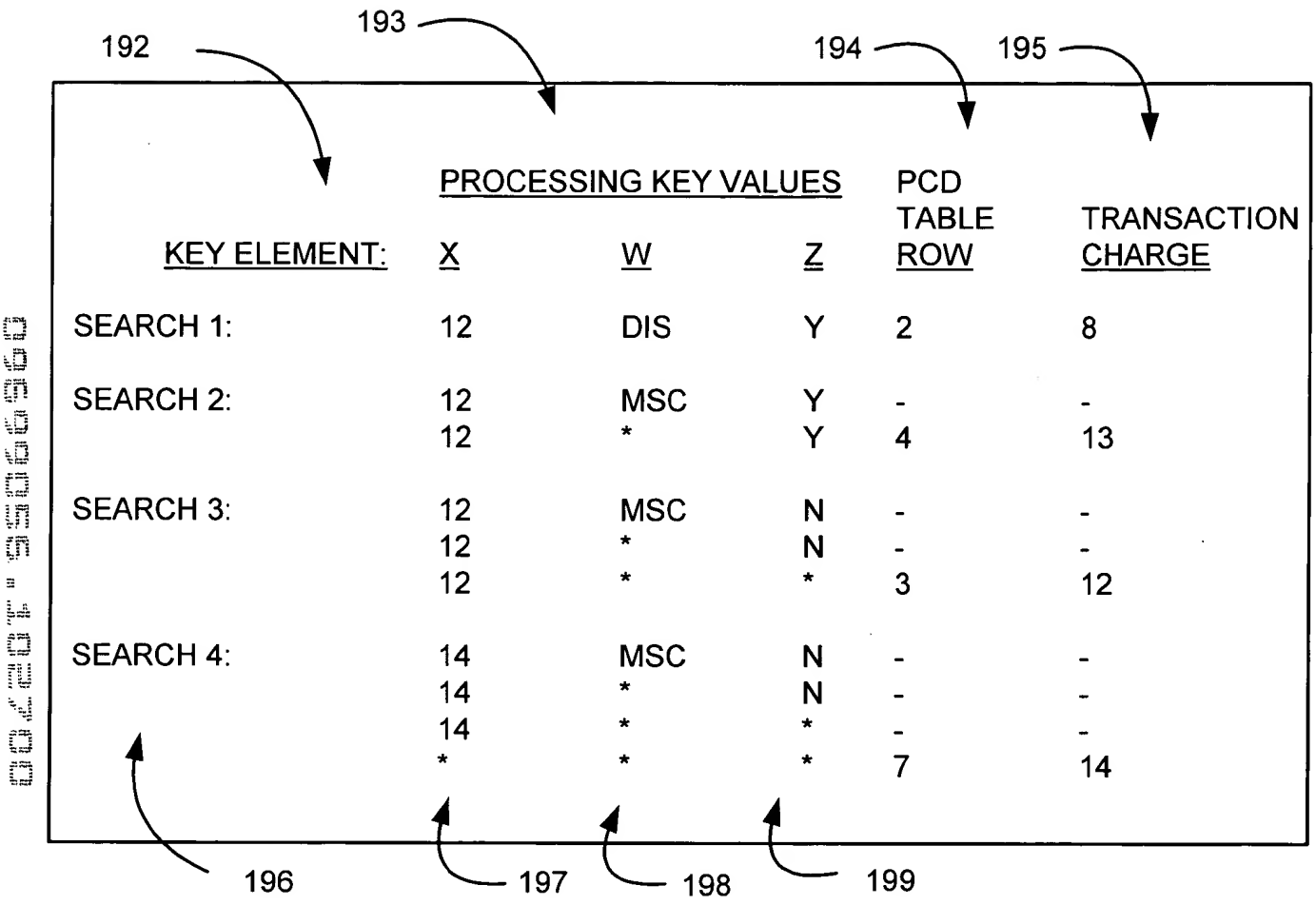
192
193
194
195
PROCESSING KEY VALUES
PCD TABLE ROW
TRANSACTION CHARGE
KEY ELEMENT:
X
W
Z
SEARCH 1: 12 DIS Y 2 8
SEARCH 2: 12 MSC Y - -
12 * Y 4 13
SEARCH 3: 12 MSC N - -
12 * N - -
12 * * 3 12
SEARCH 4: 14 MSC N - -
14 * N - -
14 * * - -
* * * 7 14
196
197
198
199

FIG. 11

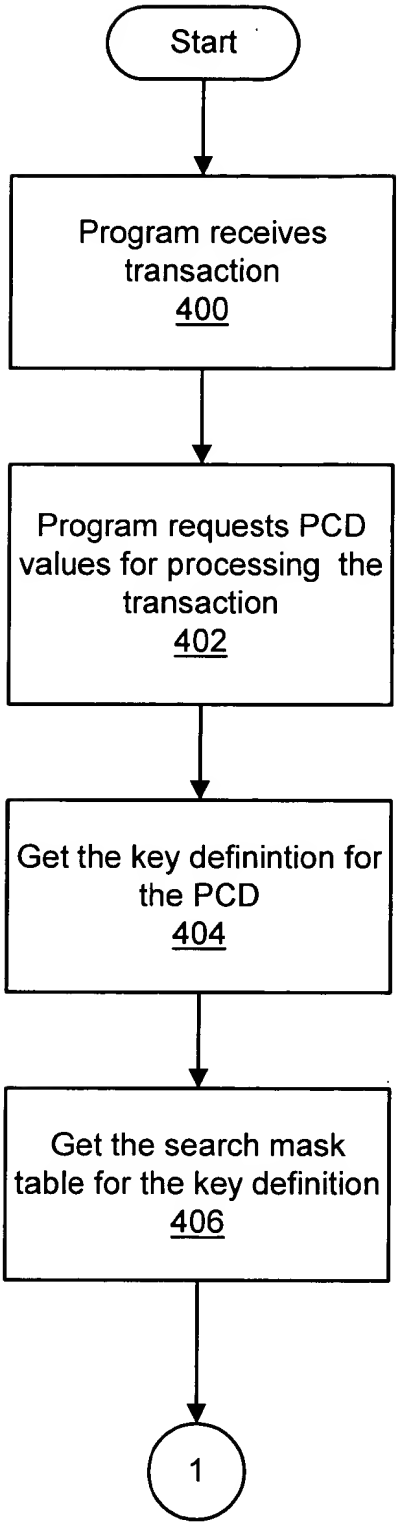
Start
Program receives transaction
400
Program requests PCD values for processing the transaction
402
Get the key definintion for the PCD
404
Get the search mask table for the key definition
406
1

FIG. 12a

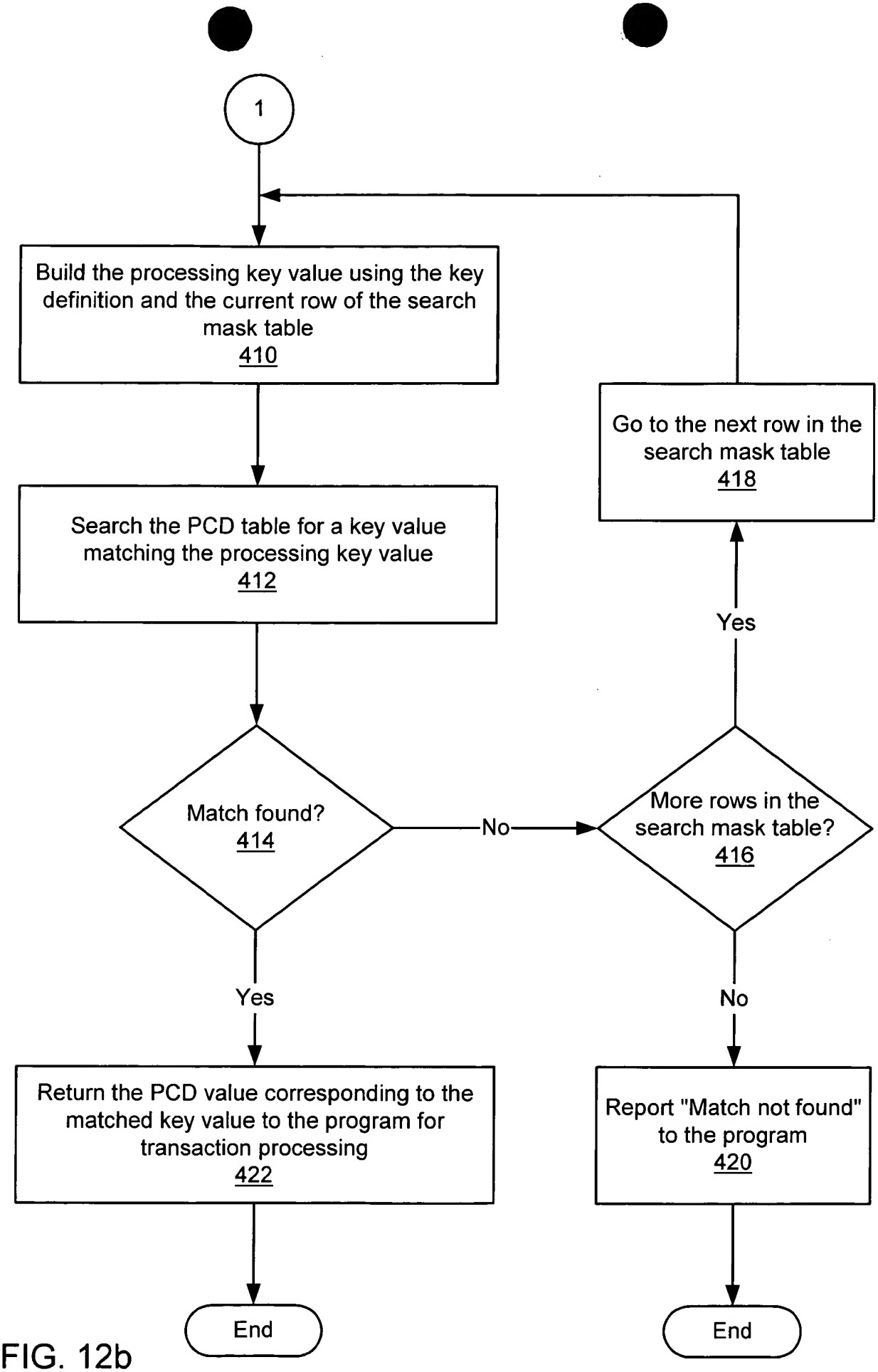
1
Build the processing key value using the key definition and the current row of the search mask table
410
Search the PCD table for a key value matching the processing key value
412
Match found?
414
No
More rows in the search mask table?
416
Yes
Go to the next row in the search mask table
418
Yes
No
Return the PCD value corresponding to the matched key value to the program for transaction processing
422
Report "Match not found" to the program
420
End
End

FIG. 12b

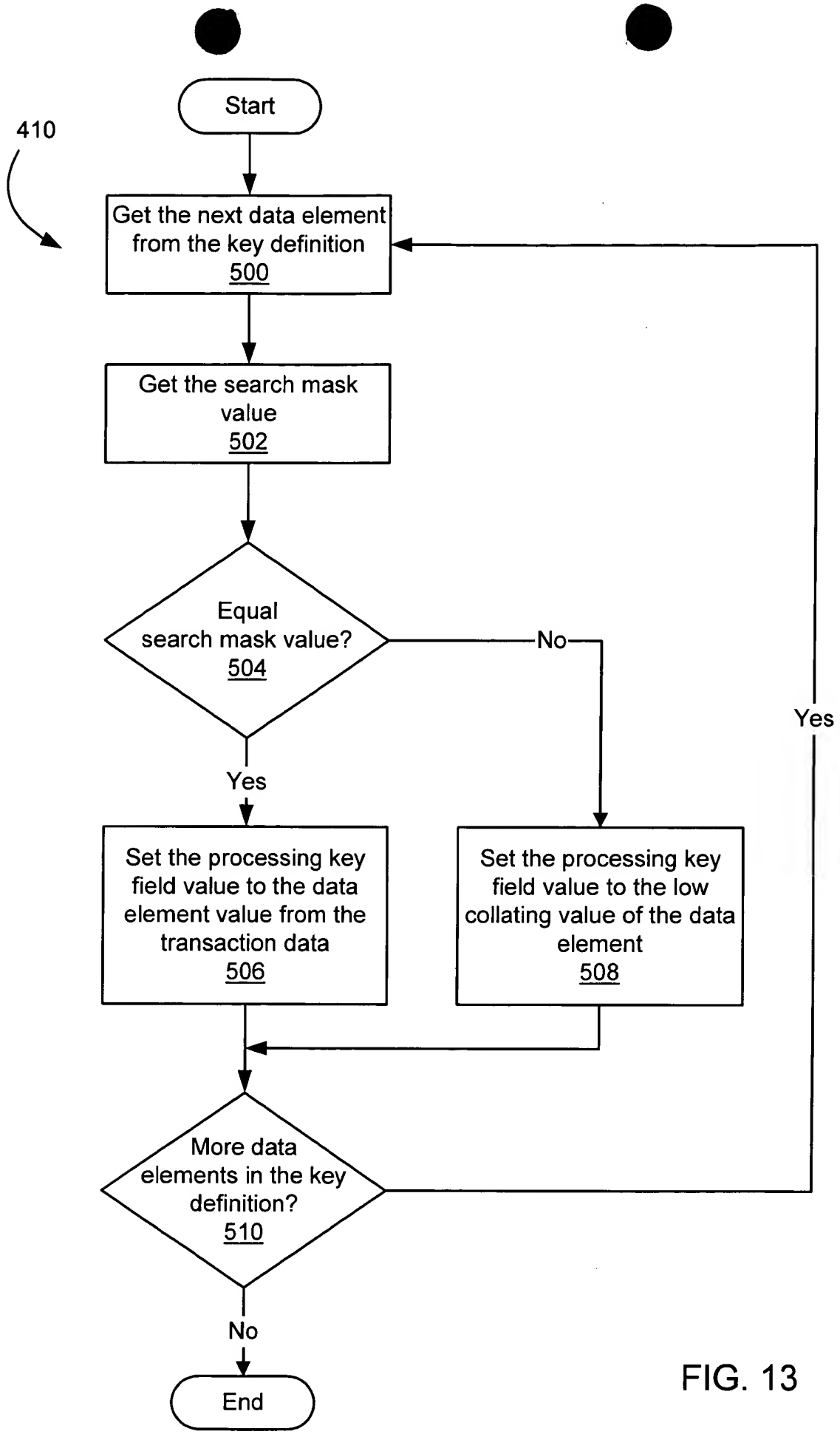
410
Start
Get the next data element from the key definition
500
Get the search mask value
502
Equal search mask value?
504
No
Yes
Yes
Set the processing key field value to the data element value from the transaction data
506
Set the processing key field value to the low collating value of the data element
508
More data elements in the key definition?
510
Yes
No
End

FIG. 13